



AUGUST 1989

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The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at the Hewlett-Packard facility, at the intersection of Lexington and Union, at 7:00 p.m. All amateurs and interested parties are invited to attend.

Editor: Chris Smith NXØE, 12455 Donovan Lane, Colorado Springs, CO 80908 495-0624

DITS AND BITS

O-Beat will allow amateurs to place free non-commercial ads and announcements of interest to local amateurs on a space available basis. O-Beat will try to insure accuracy in printing but cannot guarantee it.

PAYMENT DUE!

If you ordered a PPRAA coffee mug and haven't paid yet, please bring the money to the next club meeting. If you *didn't* order a mug yet it's not too late. Contact Karen Garbee at 495-0091 to order one, they're only \$10. They include your name, callsign and the club logo.

CORRECTION TO PROPANE GENERATOR AD

The propane gas generator being sold by PPRAA is a 7.5 kW generator, not 12 kW as previously reported. Any bids sent with the assumption that it was a 12 kW generator may be withdrawn at the option of the bidder. Sale will still be by sealed bids received not later than 15 August 1989. Minimum allowable bid is \$500.00. Mail bids to the Pikes Peak Radio Amateur Association, P.O. Box 16521, Colorado Springs, CO 80935.

AMATEUR RADIO COMMUNITY PICNIC

Jointly sponsored by: Academy A. R. C., Pikes Peak Radio Amateur Association, Pikes Peak F.M. Association -- Sunday, August 6, 1989 at 11:00AM until 4:00PM. Location: AFA Picnic Area #3 (northeast of the AFA football field). Sponsoring Clubs will supply hamburgers, hotdogs, and non-alcoholic beverages. Picnicers please bring salads, vegetables or desserts. Talk-in frequency will be 146.52MHz. All amateurs in the area are welcome.

MONTHLY CLUB MEETING

The next regularly scheduled meeting of the Pikes Peak Radio Amateur Association will be held at the Hewlett Packard facility at the intersection of Union and Lexington Boulevards. Detailed directions may be obtained from any Board member. Please note that the meeting time is at 7:00 pm (1900 hrs). This month's meeting will be on 9 August 1989.

This month the program is tentatively scheduled to be on Electromagnetic Pulse (EMP).

"THE VIEW FROM THE PEAK"

by George Hinds, N8CIX

We've just concluded the annual swapfest/campout here in Teller County, and it's been a very successful event. A great turnout, excellent prizes, lucky prizewinners, and perhaps best of all, a renewal of many friendships, and the making of new friends.

For my part, it was nice to have folks introduce themselves and tell me of their enjoyment in reading "The View From the Peak". One questioned how long the column has appeared in "O-Beat" -- my guess was about 14 years or so; I've lost count of the time. But it began back in the 70's when I was editor of the LEARA (Lake Erie ARA) "Spirit of '76 and '88" newsletter for 10 years at Cleveland, OH. The exchange of club newsletters saw the column appear in a multitude of places, including Colorado Springs.

One fellow took issue with my stand endorsing a "no-code" class of VHF-UHF license; he said that if code remained a requirement, most newcomers would learn to love it... I said most everything I've been forced to do is something I never wanted to make a career of -- like eating hominy, or crawling under barbed wire with a full field pack... Well, he said, for emergencies CW was preferred. If so, I said, it's strange that police, fire, ambulances, etc., continue to use such a terribly slow, inefficient mode as voice, right? We could sell a bunch of hand keys to the sheriff and lure his deputies into code class?

OF "LIDS, KIDS, AND SPACE CADETS"...

There is a long history of experience in the development of channelized FM communications based on the technical parameters of the equipment used. Almost as long in development is band planning for channel use, so as to attain maximum use with minimum interference to users. The ARRL band plan did not arise from pipe dreams or the exercise of individual rights, it arose from the experience of the public safety and commercial users of VHF-UHF in band-planning so as to permit those agencies to operate efficiently within equipment limitations. That experience was brought into amateur radio by the first hams to work 2-meter FM: most were radio technicians for public safety and utilities -- they brought surplus VHF hi-band rigs over into amateur radio and began amateur 2M FM.

One lesson they had learned was interference from adjacent-channel operation; bandwidth limited the closeness of channel spacing. Improved equipment changed channel spacing: at first 60 kHz spacing was essential; as rigs improved, 30kHz separation became possible; as the demand for spectrum increased, closer spacing (15kHz) was adopted but still with distance

separation between users required. As most FM'ers know, you still cannot put 15kHz spaced repeaters within 60 or 70 miles of each other without some interference to either the repeater or its users. Much of the gear we use today simply cannot operate interference-free in such conditions. And it certainly cannot operate interference-free with a mere 10kHz channel spacing when the transmitted signals are deviating at 5kHz either side of center!

Given the need to understand why we have devised and now follow a band plan, perhaps questions should be included in VE testing on channelized operation, the reason for band plans, how to avoid being the source of potential interference to others, etc. Obviously, a good many hams don't know from whence we came insofar as how this FM mode developed and is in accepted use today.

For instance, of late one Pikes Peak area repeater has been bothered from time to time with noisy, mostly unreadable signals on the repeater input but not from its regular users. It turned out a small group of folks at Longmont had decided that no one was using a particular frequency, so why not make it their very own private simplex channel? Why not? Well, if they had checked the repeater directory, they would quickly have noted their choice was, in fact, a repeater input! It would have shown them that simplex operation in that segment of the 2M sub-band was inconsistent with accepted band operations. With 25 2M simplex channels available, 17 of which are simplex-only, why would an otherwise intelligent person choose to operate simplex on repeater inputs? Why toss years of experience out the window and operate contrary to time-proven guidelines? We pride ourselves as responsible amateurs able to police our operations through self-discipline. But obviously not everyone accepts that responsibility -- and therein lies the basis for the title of this story -- for back in 8-Land we termed operators guilty of such sloppy operation as "lids, kids and space cadets".

73, George Hinds



INTRODUCTION TO PACKET RADIO - PART 4

by Larry Kenney, WB9LOZ

In our last column I talked about how to get on the air and make your first QSO. This time I'll be explaining the special calls used in packet radio, the use of digital repeaters (called digipeaters), and how to use some of the commands in your TNC.

THE SSID: Each licensed amateur is allowed to have - up to 16 different stations in operation at the same time on packet radio. You could have your home station, several digipeaters and a bulletin board system all operating with your callsign. To differentiate between the various operations you use an SSID, a "Secondary Station ID", attached to the end of the callsign. The SSID is shown as a dash followed by a number, 0 through 15. An SSID of -0 is usually not shown, and is not needed.

DIGIPEATERS: Digipeater is the term we use to describe a packet radio digital repeater. Unlike voice repeaters, most digipeaters operate on simplex and do not receive and transmit simultaneously. They receive the digital information, temporarily store it and then turn around and retransmit it.

Your TNC will allow you to enter up to eight digipeaters in your connect sequence, but using more than 3 usually means long waits, lots of repeated packets, and frequent disconnects, due to noise and other signals encountered on the frequency.

When entering the list of digipeaters in your connect sequence, you must make sure that you enter them in the exact order that your signal will use them. You must separate the calls by commas, without any spaces, and the EXACT callsigns must be used, including the SSID, if any. That means you need to know what digipeaters are out there before randomly trying to connect. Turn MONITOR ON and watch for the paths that other stations are using or check the digipeater listings. Here are some examples of proper entries: C W6PW-3 v W6PW-5 C N6ZYX v WA6FSP-1, WB6LPZ-1 C W6ABY-4 v K6MYX, N2WLP-2, AB6XO

Something to remember when using digipeaters is the difference between making a connection and sending information packets. If the path isn't all that good, you might be able to get a connect request through, but will have a difficult time with packets after that. The

connect request is short so it has much less of a chance of being destroyed by noise or collisions than a packet containing information. Keeping information packets short can help keep retries down when the path is less than ideal.

NODES: Net/Rom and TheNet nodes are another means of connecting to other packet stations. A complete review of their operation will be covered in a later part of this series.

TNC PARAMETERS: The Terminal Node Controller, that "little black box" we've talked about in the past, has more than 90 different commands available. You're able to customize your packet operating with these commands and turn on and off various features as you wish. Not all TNCs are exactly alike, but all have pretty much the same functions. I'll be using the commands used by the TNC2 and clones in my examples.

We covered a few of the commands in a previous article: CONTROL C for entering command mode, MYCALL, MONITOR, CONNECT, and DISCONNECT. Now let's discuss a few that can change the way your station functions.

ECHO: This command tells the TNC whether or not it should send what you type back to the monitor screen. If you don't see anything when you type, set ECHO to ON. Lfff yyooou sseeec ddoouubbllee, like that, set ECHO to OFF. This setting will depend on how your particular computer system functions.

CONV (converse mode): Your TNC will automatically switch to this mode when you connect with someone, but you can also do it by entering CONV (CR) at the Cmd: prompt. When in converse mode, anything you type will be transmitted via the path you set with UNPROTO. (See the next paragraph.) Anyone in monitor mode will be able to read what you transmit. Packets in converse mode are sent only once and are not acknowledged, so there is no guarantee that they'll get through. This mode is used frequently for sending CQ's.

UNPROTO: This command designates the path used when in converse mode. The default is CQ, but you can enter a series of digipeaters if you wish, or a specific group or club name. Some examples: CQ v WB6SDS-2, W6SG-1, AJ7L SFARC v W6PW-1, W6PW-4 Remember, you have to change UNPROTO for use on different frequencies, unless you leave it set simply to "CQ". (continued on p. 9)

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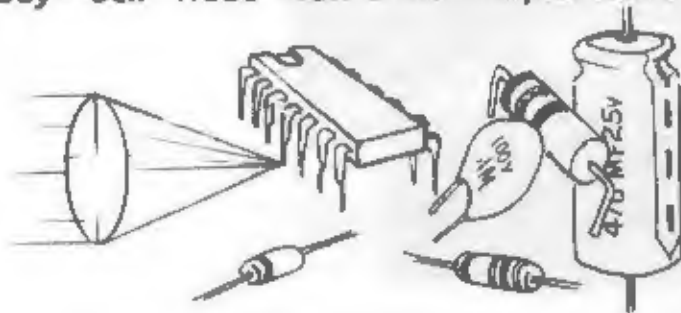
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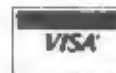
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1989 PPAA FIELD DAY RESULTS



The 1989 PPAA Field Day effort was widely enjoyed by, such as the two enthusiastic participants in the club trailer, shown in the photo above.

(continued on the next page)



The Novice / Technician station received much use this year, under the call NQJUF (logging in the photo above). Nearly 100 QSOs were made, on 10m phone as well as 40m CW.



The CW station pictured above recorded 372 contacts. Overnight operation was once again provided by KDOEL. As Max says, he operates **one** contest a year, so he goes all out!



The phone station worked the contest around the clock. Les was the phone station manager, and he put in plenty of time into the effort.



The satellite station shown above provided needed bonus points as well as QSOs. Bonus points were also received for 100% emergency power, media coverage (ch. 11 News), public location, and packet as well. Total club points were 4158 -- good enough to put us in the top 10% of class 2A stations ~~last~~ year -- but this year's better conditions may make for stiffer competition. We await the results in November QST!

(Thanks to KOTER for the score details. Photos by NX0E.)

CQ PARTS

By Ron Deutsch, NK0P

With homebrew nite only five months away I decided to get a jump on things and try to find that prize winning project early. After looking thru some of my magazine collection (QST 1929-1989) and coming up with a few worthwhile projects I began the task of parts location.

To my dismay NONE of the projects I wanted to build had parts I could get locally. I admit many of them ARE available, but if you are missing that one critical part, what good is the project??

It seems the more in a hurry you are to find a part the less likely it is you will find it. So starting out five months ahead of time should give me enough time.

The other problem is knowing the names and address of sources of parts. I keep a large drawer filled with catalogs. I go through all the magazines a can find once a year and send the readers service cards in with as many of the blocks checked as they will allow.

A good place to start is the Zero Beat advertisers. Failing that the following list should allow you to locate any part you need:

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Advanced Micro Devices
901 Thompson Place
Sunnyvale, CA. 94086 (408)732-2400

BNF Enterprises
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Computer Shopper
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Cramer
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Irvine, CA. 92714 (714) 979-3000

Digi-Key
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South Thief River Falls, MN. 56701 (800)344-4539

Edmund Scientific Co.
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Upper Saddle River, NJ. 07458 (800)922-0075

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Akron, OH. 44310 (216)633-8460

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Sunnyvale, CA. 94086 (408)730-5900

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Lakeside, CA. 92040 (619)449-2222

National Semiconductor
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Gardene, CA. 90249 (213)323-3923

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Santa Clara, CA. 95054 (408)744-1500

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Centerville, OH. 45459 (513)434-0031

I have copies of these catalogs and many more (I got tired of typing). If you get in a pinch give me a call and I'll help you locate the part you need!

73's Ron-NK0P

FRACK: This determines how long your TNC will wait for an acknowledgment before resending a packet. It shouldn't be set too short, or you simply clutter up the frequency, yet it shouldn't be too long, or you'll spend too much time waiting. I use FRACK set to 7, and have found that to be an overall good value.

DWAIT: Used to avoid collisions, DWAIT is the number of time units the TNC will wait after last hearing data on the channel before it transmits. I have DWAIT set to 16, and have found that to work well.

PACLEN: Determines the number of characters in your packets, ranging from 1 to 256. The more characters you send per packet, the longer it takes to transmit the information and the greater your chances are of noise, interference or another station wiping it out. I've found a PACLEN of 80, which is the length of one line, to be a good value. When working a station nearby, PACLEN can be increased. When working a distant station, it should be decreased.

RETRY: Your TNC will retransmit a packet if it doesn't receive an acknowledgement from the station you're working. RETRY indicates the number of times the TNC will try to get the packet through before giving up and disconnecting. This can be set from 1 to 5, but I've found 8 to 10 to work well. Less than that causes an unnecessary disconnect if the channel happens to be busy, but more than that clutters up the channel.

Try working with those commands. In the next article I'll cover a few more, plus take a look at how to use a packet bulletin board system.

-WB9LOZ



1934 Official

SHORT WAVE RADIO MANUAL

edited by Hugo Gernsback
Build simple, high performance old time shortwave radios!! You can—all of the secrets are here: the circuit diagrams, parts layout, coil specifications, construction details, operation hints and much more. A classic for experimenters, shortwave listeners, ham radio operators, old time radio collectors and just about anyone interested in old-time radios. Even if you never get to build one of these radios, you're sure to get hours of enjoyable reading out of this book. 8 1/2 x 11 Paperback, 260 pages. ISBN 0-917914-64-3



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MINUTES OF JUNE GENERAL MEETING

submitted by AJ NOCMW, Secretary

The general meeting of the Pikes Peak Radio Amateur Association was held at the Hewlett - Packard Briargate Facility, Wednesday evening 12 July 1989. The meeting was called to order by the president Keith NYOT at 19:00, with 41 members and guests present.

The minutes of the previous General Meeting and Board meeting were approved as printed in O-Beat, with one correction: Doc WOMCT provided his motor home for the March of Dimes and not the Volks March.

Committee Reports

Note: Please contact the chairman at the phone number listed if you can help out on any of these committees.

Treasurer - Ron NKOP (593-8352):

The treasurer's report was given by Ron. The club checkbook balance is \$2,254.24. Expenses this month were \$472.13 and income was \$314.00.

Interference - Ron NKOP (593-8352):

Nothing to report.

Education -:

NOTE: We will need an education chairman if we are to keep our status as a Special Service Club. *(Ed note: See the July board meeting report for the latest news about this.)*

Publicity - Karen NIFED (495-0091):

Channel 11 covered the PPRAA field day effort. Custom coffee mugs for the PPRAA 1989 Field Day effort are available for \$10 each. If you've ordered one and haven't paid, please pay Karen. T-shirts with the club logo on them will be available to those who help with the state games. In addition, a short history of the club will be printed in the program to be passed out at the games.

Colorado Council of Amateur Radio Clubs (CCARC) - Oak KOROL (635-2289):

The next meeting will be in September.

Deaf and Blind School -Bud NOAA and Virginia KBOEWB (689-2983):

Bud NOAA and Virginia KBOEWB have volunteered to help with this when the school reopens.

O-Beat - Chris NXOE (495-0624):

Articles will again be needed early for the August issue.

ARES - Cliff KB0CVW (597-7334):

Meets every Wednesday night on the 37197 repeater (WOYNE) at 1830 hrs local.

Public Service - Mike KOTER (636-1290):

Mike was not present so Oak KOROL gave the following report: Lots of help will be needed with the State Games - Oak gave a rundown on what help will be needed. Volunteers are needed on-site for the Rocket Launch on Aug 4th, and on the 4th, 5th and 6th someone is needed to man the telephone in the Springs.

VE Testing - Max KDOEL (488-9289):

Next test will be this September on either the 9th or 16th at Chapman College, at the corner of Flintridge and Academy. This test will be closed to walk-ins, so register with Max if you want a place at the exam.

Picnic Malcolm KE9S (488-2071):

The picnic will be at the Air Force Academy, picnic ground #3. People are requested to bring a dish as follows: A-F salad, G-L relish, M-R vegetables, S-Z deserts. Note this is by last name, not call signs! Attendees are welcome to participate in a mini-swapfest.

Old Business

Nothing to report.

New Business

HP has indicated that we may have to move, so all members are requested to look for a new place to meet should it be come necessary to move. Bdale N3EUA reports consultations are in progress about an emergency / public service repeater with the PPFM Association. Fred Ka0WIE reports his BBS will have an ASCII download capability for binary. Please do downloads at non - prime times. For more information about his BBS call him at 591-0290. Doug NOHJT reported that the AFA club has moved its meetings to the snack bar at the golf course. They're still on the Tuesday prior to the PPRAA meeting at 1130 hrs. Keith NYOT has turned in his resignation as president, effective July 22. He is being recalled to Canada. The members thanked Keith for a job well done. Rick WB7THT will assume the duties of president and Doug NOHJT will fill in as vice-president until the October elections.

Prizes:

After a short intermission, the drawings were conducted by Rick WB7THT. the following won prizes:

KA0HZN	Antenna Book
KD0NB	Balun
N7MLE	Antenna Wire
KD0EL	Dinner at the Village Inn
N0CMW	Test Leads
WA0MNL	Map

Program:

The planned speaker had a last minute priority engagement, so Tom Merideth from the state games consented to give us a talk. He spoke on the games to be held this July 28, 29 and 30. An article about PPRAA will be included in the souvenir program to be given out at the games.

The meeting was adjourned at 2115. The next meeting will be on August 9 at 1900 hrs at the HP Briargate Facility.

-N0CMW

MINUTES OF THE JULY BOARD MEETING

submitted by Al N0CMW

The Board meeting was held on 17 July 89 at the QTH of Al N0CMW. In attendance were Al N0CMW, Bud N0DDF, Doug N0HJT, Rick WB7THT, Ron NKOP, Malcolm KE9S and Floyd KB5FCN.

A discussion was held on the picnic and Malcolm was authorized to spend what is required for a nice picnic. He and Rick will do the shopping.

The emergency repeater will be discussed at the upcoming FM Association board meeting.

Rick and Ron will check out the Elk's Club on north Nevada as a possible place to meet.

Two advertisers have dropped their ads in O-Beat, and a third is 3 months behind in paying the bill. One vendor has not paid for the table at the swapfest.

The swapfest for next year is currently being planned for 19 May 1990 at the Rustic Hills Mall. Rick and Ron have graciously volunteered to co-chair it again.

In the same spirit of volunteerism, Bud N0DDF has agreed to be the interim education committee chairman. He would like a lot of help from the membership, so give him a call if you can assist.

More volunteers are needed for a host of club

projects, so get involved with one or more if you can. Contact any board member to see where you can help.

Elections will be this October, so come out and run for office or volunteer someone who will.

All members are reminded that board meetings are open to everyone, not just board members.

The planned program for the September meeting is a talk on EMP by General Royer.

The meeting adjourned at 2000.

-N0CMW

AFA RADIO CLUB MINUTES

The meeting was on July 11 at 1130 at the recreation center snack bar. Five members were present, including a new one, Bud N0DDF. Serious talk on what the club was doing and its future followed.

The club treasury has a balance of \$47 though dues are due next month. The next meeting will be held at the golf course snack bar.

-NKOP & N0CMW



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9/2, 3	Alamogordo, NM
9/10	Camp-Out Laramie, WY
9/15, 16	Wichita Falls, TX
9/24	Boulder County Fairgrounds — Longmont
	<i>We plan to be there!</i>
9/30	Santa Fe, NM
10/8	Lubbock, TX
11/10, 11, 12	Odessa, TX
12/2, 3	Apache Junction, AZ
	<i>We may not get there!</i>

Hamfest season is in full swing and the equipment inventory changes weekly.

We have lots of good used HF and VHF gear in stock.

Call for the rig you want.

73's — Jess

8/89

Membership Application

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Colorado Springs, CO 80935

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Name _____

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Additional Names _____ Call _____ Class _____

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